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## Description

The present invention relates to an article of manufacture, said article being especially useful for cleansing surfaces, especially skin. While the article herein is suitable for a variety of uses where a high loft fabric with extremely low compressibility and very high usable void volume is desirable, the present article is especially useful for removing feces from the perineal region of infants or other incontinent persons.

Maintaining optimal hygiene in the perineal region of infants and incontinent patients, especially non-ambulatory or geriatric patients, has always been a difficult and unpleasant task. Of course, the perineal region can be adequately cleansed after defecation using soap and water, but this is inconvenient. Accordingly, common practice is to use disposable paper products, generally referred to as toilet tissue, for anal cleansing.

One problem associated with the use of common, dry toilet tissue for cleansing elderly and ill, incontinent patients is that such dry products are not very effective for removing fecal residues. Common practice is for the attendants caring for such patients to increase wiping pressure to remove stubborn fecal residues, but that can result in discomfort and skin irritation for the patient.

A variety of "pre-moistened", disposable, tissue-type wiping articles are commercially available, and have been taught for use in cleansing the perineal area. However, these products suffer from the disadvantage that, being made from relatively thin, low-loft, paper structures, they do not have a high retention capacity for solid fecal matter. As a result, multiple sheets and multiple wipes must be used to remove the high fecal loads often encountered with geriatric patients, for example. Moreover, multiple wiping with a single sheet is rather ineffective since the fecal matter is spread over the skin. These problems are overcome by means of the high retention capacity of the present articles, and the oleaginous cleansing agent which does not undesirably dilute and smear the fecal matter.

U.S. Patent 4,112,167, to T. W. Dake, J. S. Clunie, and A. D. Early, issued September 5, 1978, described the problems associated with perineal cleansing, and discloses a skin cleansing product containing a lipophilic cleansing emollient, said product being designed to overcome some of the problems associated with the dry, high-density tissue-paper products commonly used for removing fecal matter from the perineal skin.

The present invention provides a cleansing article whose extremely high loft (as compared with the article of U.S. Patent 4,112,167) element comprising the wiping surface provides an extremely high retention capacity for fecal matter. This high-capacity element comprising the wiping surface, used in conjunction with an oleaginous cleansing agent, provides an

extremely convenient article which completely and quickly rids the skin of large amounts of fecal matter with, essentially, a single wipe.

## Background Art

Anal cleansing products with high void volumes (relative to standard, high density toilet tissue) and lipophilic cleansing emollients are disclosed in U.S. Patent 4,112, 167, cited hereinabove.

A number of U.S. patents cited in U.S. Patent 4,112,167 relate, in a general way to webs used for skin cleansing and/or various cleansing materials. See, for example U.S. 2,902,395; 2,999,265; 3,150,049; 3,310,454; 3,366,532; 3,595,731; 3,708,435; 3,759,775; 3,818,105; 3,823,057; 3,829,563; 3,881,210; 3,896,807; 3,949,130; 3,993,820 and 3,994,771.

## Summary of the Invention

According to the present invention there is provided a cleansing article comprising a web of fibrous material of basis weight in the range from 7 g/m<sup>2</sup>—70 g/m<sup>2</sup> releasably impregnated with, or intended for use with, an oleaginous cleansing agent wherein the web comprises (a) a high loft element having an uncompressed thickness of at least 2 mm formed of resilient fibers and comprising the wiping surface, said element having a usable void volume of at least 90% under a compression of from 7.75 g/cm<sup>2</sup> to 15.5 g/cm<sup>2</sup> and (b) a faeces-impermeable backing sheet coextensive with said element and sealed to said element around the edges thereof.

Preferred articles herein are those wherein the fibers which comprise said web are crimped.

Typical articles herein are characterized by a web having an uncompressed thickness in the range from 2 mm to 15 mm, or thicker. Preferred articles are those wherein the web has an uncompressed thickness in the range from 4 mm to 5 mm and a density which increases on compression from 0.01 g/cm<sup>3</sup> uncompressed to 0.04 g/cm<sup>3</sup> when compressed under hand pressure; highly preferred are articles having the aforesaid preferred range of thickness and density; and wherein the fibers comprising the web are crimped.

The present articles are characterized by a usable void volume under a compression of from 7.75 g/cm<sup>2</sup> to 15.5 g/cm<sup>2</sup> of at least 90%. The highly preferred articles of the present type wherein the fibers are crimped can have usable void volumes which are frequently at least 95% even when compressed under typical hand wiping pressure (7.75 g/cm<sup>2</sup>—15.5 g/cm<sup>2</sup>).

The resilient fibers used to manufacture the web portion of the articles of this invention are preferably hydrophobic. Fibers having an average fiber diameter from 0.009 mm to 0.075 mm are especially useful; a preferred diameter range is from 0.0185 mm to 0.037 mm. Commercially-available hydrophobic polyester

fibers or polyolefin fibers are conveniently used. Crimped polyester fibers having an average diameter from 0.0185 mm to 0.037 mm, especially fibers having an average length, in the crimped state, in the range from 7.6 cm to 15.5 cm, are especially useful, for reasons described more fully hereinafter. Tow (continuous strands of fibers) can also be advantageously used in this invention.

By "high loft element comprising the wiping surface" herein is meant the element of the article designed to pick up and retain particulate soils, e.g., fecal matter. The term "high loft" denotes that the web comprising the wiping surface is substantially thicker in the Z-direction (of the order of millimeters, as disclosed hereinabove) than the more typical toilet tissues, which have a much thinner Z-dimension (on the order of fractions of a millimeter) than articles of the present type.

By "web" herein is meant a carded or otherwise entangled network of fibers. Carded webs suitable for use in the practice of the present invention can have the fibers all aligned substantially unidirectionally, although interwoven and cross-lapped webs can be used.

Examples of non-carded webs useful in the invention are airlaid webs, webs made by the well-known Rando-Web Process which uses equipment marketed by Rando Machine Corporation of Macedon, New York, and, in general, nonwoven webs of any type having the requisite high loft. Should tow be used in this invention, the web can be prepared by any of the well known techniques used to open or disorient the crimped fiber tow.

By "resilient fibers" herein is meant fibers which resist compression, and which return to substantially their original conformation when compression is released. The web of resilient fibers employed in this invention which are resistant to compression in the Z direction are to be contrasted with fabrics such as cashmere, which, although having a relatively high loft, readily collapse on use since the fibers are aligned substantially parallel to the Z-direction. High loft fabrics such as cashmere are not usable herein since their collapse in-use renders them non-retentive to the high loads of solid waste matter that the articles of the present type are designed to pick-up and retain.

By "releasable containing" is meant that, in use, the oleaginous cleansing agent is released from the wiping surface onto the waste matter present on the surface being wiped and the underlying surface.

The "oleaginous cleansing agent" and the "faeces-impermeable backing sheet" are defined and exemplified hereinafter.

By manufacturing the high loft element comprising the wiping surface of the present articles from a web of resilient fibers, the articles of the present invention are provided with a high usable void volume, even under compression, especially under typical hand pressures, as

would be encountered in cleansing the perineal region of a patient.

By "void volume" is meant the volume of the substrate which is not occupied by the fibers or oleaginous cleansing agent (and which varies somewhat with applied pressure).

By "high usable" is meant that the void volume is highly accessible to solid residues, such as feces, due to the large continuous void spaces in the web structure, even under hand pressure, such as would be encountered in a typical perineal cleansing procedure, or the like. The high usable void volume of the web provides high pick-up and retention for solid waste, especially fecal matter. For example, articles of the present type having a web *ca* 2 mm thick (compressed under hand pressure) pick-up and retain *ca* 0.04—0.2 g of feces/cm<sup>2</sup> in a single wipe (i.e., under non-equilibrium conditions).

All percentages herein are by weight, unless otherwise specified.

#### Description of the Drawings

Figure 1 is a perspective view of a preferred article 10 of the present type, said article comprising a web formed of a fibrous element 1, and a faeces-impermeable backing sheet 2, said element being sealed to said backing sheet with web seals 3 in a rectilinear pattern. In the article depicted, an optional but preferred, scrim 4 is also affixed to the backing sheet. In the article depicted, the composite fibrous element/backing sheet/scrim is sealed around three-fourths of its periphery with a peripheral seal 5 to optional, but preferred, rear backing 6, thus providing the convenient mitt-like article shown in Figure 1, with an un-sealed area 7 into which the user's hand fits.

Figure 2 is a perspective view of the individual components of the preferred article 10 showing the sequence of assembly of the fibrous element 1, backing sheet 2, and scrim 4 to form the composite web 11 which is then sealed to rear backing 6, as previously described, to form article 10.

Figure 3 is an enlarged cross sectional view taken along section line 3—3 of Figure 1, showing one area of the fibrous element 1, backing sheet 2, web seal 3 and peripheral seal 5, scrim 4, rear backing 6, and a portion of the peripheral un-sealed area 7 into which the user's hand can be placed.

Figure 4 is a microscopic picture (100x; scanning electron microscope) of a fibrous batt of the type used in the present article. The fibers in Figure 4 are not coated with the oleaginous cleansing agent.

Figure 5 is a microscopic view (100x; scanning electron microscope fitted with an environmental cell) of the fibers coated with the oleaginous cleansing agent. Note that the cleansing agent depicted in Figure 5 is non-drippy.

Figure 6 is a graph of the thickness vs. pressure curve for the present product (curve

A), as compared with the article of U.S. Patent 4,112,167, cited above (curve B). The typical hand-pressure region is described by the vertical dashed lines.

The following describes the preparation of a preferred perineal cleansing "mitten" and means for constructing same. It will be appreciated by those skilled in the art that cleansing articles of various types can be constructed in similar fashion, without departing from the scope of this invention as defined in the appended claims.

A preferred article of the present type is characterized by a fibrous element having a wiping surface with the approximate dimensions of 20.3 cm x 25.4 cm (8 in x 10 in) bonded to a backing sheet, scrim, and rear backing to provide a mitten, and coated with an oleaginous cleansing agent, all as described in the description relating to the Figures.

In the manufacture of the fibrous element, it is preferred that the fibers be as long as possible, since the longer the fiber, the fewer the bonds required to affix the fibrous element to the backing surface; and, the fewer the bonds, the higher the loft of the wiping surface. On a commercial basis, fibers in the size length of 7.6 cm to 20.3 cm (3 in—8 in uncrimped length) are passed through a standard Davis and Furber carding machine to provide a fibrous element comprising crimped fibers. The crimped fibers are of a length about 60% that of their original length in the relaxed state (ca 8—16 crimps per 2.54 cm).

As disclosed hereinabove, it is preferred that the fibers be hydrophobic, and polyester fibers are convenient and preferred. For skin comfort, it is preferred that the fibers be in the range from 6 denier (0.0185 m diameter) to 12 denier (0.037 mm) although fiber diameters outside this range, such as fibers as fine as 3 denier or less, can be used, according to the desires of the manufacturer. For use on human skin, the 6 denier polyester fiber is quite comfortable and is preferred.

Using standard carding technology, a fibrous batt of 6 denier polyester fiber is formed into a web having a basis weight of 25 g/m<sup>2</sup> and an uncompressed thickness of 6—8 mm. This type of web has a density of 0.0128 g/cm<sup>3</sup> in the uncompressed state, increasing to 0.04 g/cm<sup>3</sup> when compressed under ordinary hand pressure (7.75 g/cm<sup>2</sup> to 15.5 g/cm<sup>2</sup>).

The backing sheet material can be selected from any suitable sheet substrate. The backing sheet is impermeable to feces and preferably to oleaginous materials, to provide protection for the user's hands. Flexible (0.02 mm to 0.06 mm thick) polyethylene is preferred for use as the backing sheet.

In a highly preferred, but optional, mode, a scrim is affixed to the backing sheet on the side of the backing away from the fibrous element as shown in Figure 2. The scrim provides additional reinforcement, but, more importantly,

provides purchase for the user's hands against the slick polyethylene backing sheet, thereby helping maintain control of the wiping mitten during use. There is no particular limitation on the type of scrim employed, but a nylon scrim covered with any convenient thermoplastic material having a melting point near that of polyethylene is convenient.

Manufacture of the present article can be carried out by simply laying the fibrous polyester element onto the polyethylene backing sheet, which is on top of the optional scrim. The polyester element is sealed around its edges to the backing sheet and scrim by impulse heating using a heat sealer (120—150°C) or other convenient means. The fibrous element is then sealed in a rectilinear pattern to spotbond it to the backing sheet. In the heating process, both the backing sheet and the coating on the scrim melt to provide bonding; the polyester fibers comprising the element are not melted at these temperature ranges. Sealing patterns other than rectilinear can be used, according to the desires of the manufacturer, but an unduly large number of seals can unnecessarily flatten the fibrous element, thereby undesirably diminishing its capacity to retain solids. In article 10 of Figure 1, the seals are ca 2.54 cm on a side.

The assembly comprising the fibrous element/backing sheet/scrim prepared in the foregoing manner can then be heat sealed around, for example, three-fourths of its periphery to a rear backing material. The preferred rearbacking material is a standard paper toweling, manufactured under the trademark BOUNTY. The assembly can be heat sealed to the paper backing. Of course, other types of rear backing materials can be employed, but it is convenient, and preferred, for hospital use that the rear backing be one which can absorb both water and oil, thereby being of assistance in patient cleansing, as may be required. Assembly is as depicted in Figure 2.

The fibrous element which comprises the wiping surface of articles of the foregoing type is releasably impregnated with an oleaginous cleansing agent. Impregnation can be done at any convenient time during manufacture, preferably after the component parts of the mitten are assembled and bonded together. A variety of oleaginous materials are suitable for this use, however, in order that the completed article be non-drippy, it is preferred that the cleansing agent be in solid or semi-solid form up to about 32°C. It is also preferred that the agent be an emollient for human skin. Any of the lipophilic cleansing agents of the type described in U.S. Patent 4,112,167, cited hereinabove, can be used for this purpose. A preferred oleaginous cleansing agent comprises the following mixture: Brij 72 (polyoxyethylene (2) stearyl ether; ICI America, Inc.) 10%; mineral oil 66%; hexadecanol 8%; and octadecanol 16%.

The cleansing agent is applied to the fibrous element at a rate of 4 grams per article (20.3

cm x 25.4 cm web). Any convenient means of application can be used, but it is preferred that the cleansing agent be sprayed on the pad using a Wagner Airless sprayer, with the agent in molten form. Typically, using an Airless sprayer at a distance between spray nozzle and web surface of 10 cm provides good, non-drippy, uniform coverage of the fibrous web. Other application rates can be used (e.g., 2—8 g for an article of the foregoing dimensions) depending on the intended use of the article.

In use, an article of the foregoing type is simply wiped (usually, a single wipe suffices) across the surface being cleansed, and excellent removal of solid soil (e.g., fecal matter) is secured.

The cleansing articles of the present invention comprise: a web formed of a combination of a fibrous element having a high loft and high usable void volume, as disclosed hereinabove; and a faeces impermeable backing sheet which is secured to and stabilizes said faeces impermeable fibrous element; and an oleaginous cleansing agent either impregnating, or intended for use with, the web.

#### The Fibrous Element

The element which comprises the wiping surface of the present articles and the containment means for particulate soil can be fashioned from a wide variety of resilient fibers which are commercially available. Among such fibers there can be mentioned, for example, polyesters, nylons, rayons, polyethylene, polypropylene, and the like. The selection of the chemical composition of the fibers is not particularly important to the practice of this invention, so long as the fibers are resilient to compression and are stable to the cleansing agent.

The fiber diameter can also vary over a wide range (from 0.009 mm to 0.075 mm, preferably from 0.01 mm to 0.05 mm) depending on the intended end-use of the article. Fibers below 0.009 mm in diameter may be so fragile that they may be too compressed under normal hand pressure; fibers above 0.05 mm diameter may be perceived as "rough" when used on a sensitive surface such as skin.

The fibrous element can be made using standard carding techniques to provide a network of fibers having a void volume in the range from 90% to 99%, preferably 98%. Preferably, the fibers are not bonded together in the element, since bonding decreases loft.

As noted hereinbefore, techniques other than carding, such as airlaying, can be used to make the fibrous element useful in this invention so long as the element is a high loft element having the properties herein disclosed.

The thickness of the fibrous element, as manufactured, is generally in the range from 5 mm to 10 mm for a typical cleansing article of the present type. Fibrous elements having a basis weight in the range from 17 to 70 g/m<sup>2</sup> are employed.

Typical fibrous elements used herein do not have sufficient inherent strength to maintain their integrity when used in their intended wiping mode. Accordingly, such elements are bonded to a backing sheet, as disclosed hereinabove. This is conveniently done by heat-sealing. However, if an inordinately large number of heat seals are employed, the loft of the web is unnecessarily and undesirably compressed, simply by virtue of the number of seal points. In order to minimize the number of seal points needed to securely fasten the element to the backing sheet, it is preferred that the longest available fibers be used to form the web. Fiber tow is quite useful in making the fibrous elements useful in this invention. Also, in general, fibers in the length from 7 cm to 30 cm (uncrimped length; crimped length average from about 3 cm to 15 cm) are sufficiently long that, even when heat sealed to the backing sheet, the fibrous element maintains an average thickness across the article approximately 85—90% that of the original element thickness. For example, an article of the type depicted in Figure 1 sealed in a rectilinear pattern with the seals an average of 2.54 cm apart and made from a fibrous element approximately 6 mm in thickness will have a height for each individual fibrous "pillow" of about 4.5—5 mm.

#### The Backing Sheet

The selection of backing sheet material employed herein is not particularly critical to the invention, and a wide variety of backing sheets can be employed. While flexible backings are preferred for use in preparing mitten-type cleansing articles of the type shown in the Figures, other backing sheet materials can also be used. One requirement for the backing sheet is that it have sufficient structural integrity that it reinforces the fibrous element. Another requirement is that the backing sheet be impermeable to faeces, and preferably also to oleaginous agents. An impermeable backing sheet which backs substantially all of the fibrous element is preferred to protect the user's hand from undesired contact with both the oleaginous cleansing agent and particulate soil being taken up in the void spaces of the fibrous element. Typical backing sheet materials include impermeable (treated) paper, impermeable woven and non-woven fabrics, plastic and plastic laminates, and the like.

#### The Cleansing Agent

The oleaginous cleansing agents typically used herein are nonvolatile, nontoxic, substantially nonhygroscopic, and well-tolerated by skin.

In general, oleaginous cleansing agents useful herein are compounds or mixtures of compounds which are mainly paraffinic hydrocarbons and their common derivatives (e.g., fatty alcohols, acids and esters) which, when applied to the skin (or other surface being

cleansed), spread over the skin's surface because of their low surface tension against air (less than about 35 dynes per cm at 20°C).

Preferred oleaginous cleansing agents used with the article of the present invention are "non-dripping". That is, the agents are selected so that they adhere to the fibers of the wiping surface until use. Preferred oleaginous cleansing agents have a rheology typical of pseudoplastic or plastic fluids. When no shear is applied, such plastic or pseudoplastic oleaginous cleansing agents have the appearance of a semi-solid, but can be made to flow as the shear rate is increased (e.g., by wiping). These oleaginous cleansing agents exhibit decreasing viscosity with increasing shear rate. Preferred oleaginous cleansing agents have a viscosity no greater than 5,000 cps when measured at a shear rate of 400 sec<sup>-1</sup> at a temperature of 20°C. Included within this definition are silicone oils and waxes which, although non-paraffinic in origin, satisfy the above specified physical criteria. These also desirably provide an emolliency benefit to skin being cleansed with the present articles.

Oleaginous cleansing agents are commonly used as oil-based skin cleansers in the cosmetic art. Specific examples of individual substances included in the term "oleaginous cleansing agents" are: paraffinic hydrocarbons (straight or branched chain, saturated or unsaturated), having chain lengths of from 16 to 60 carbon atoms, such as mineral oil (C<sub>16</sub> to C<sub>20</sub>) petrolatum (C<sub>18</sub> to C<sub>32</sub>), paraffin waxes (C<sub>20</sub> to C<sub>40</sub>) and microcrystalline waxes (C<sub>35</sub> to C<sub>50</sub>); alkyl esters derived from monocarboxylic fatty acids having from 12 to 28 carbon atoms and short chain (C<sub>2</sub> to C<sub>8</sub>) mononvdric alcohols, such as isopropyl laurate, isopropyl myristate, isopropyl palmitate, ethyl hexyl palmitate; alkyl esters derived from fatty alcohols (C<sub>12</sub> to C<sub>28</sub>) and short chain acids, e.g., lactic acid, such as lauryl lactate, cetyl lactate; fatty acids, fatty alcohols and fatty alcohol ethers having from 12 to 28 carbon atoms in their fatty chain, such as stearic acid, cetyl alcohol, ethoxylated and propoxylated fatty alcohols; glycerides, acetoglycerides, and ethoxylated glycerides of C<sub>12</sub> to C<sub>28</sub> fatty acids; other fatty esters of polyhydroxy alcohols; lanolin and its derivatives; polysiloxanes having a viscosity at 25°C of from 5 to 2,000 centistokes; and mixtures thereof.

The aforesaid materials can optionally be used in emulsion form as an oleaginous cleansing agent herein. For example, cleansing emulsions comprising any of the aforesaid cleansing agents and water, plus suitable emulsifier, can be prepared in well-known fashion and used to advantage as the oleaginous cleansing agent in articles of the present type. However, when used for removing fecal matter from human skin, it is preferred that the oleaginous cleansing agent be substantially free from water.

The following examples illustrate other embodiments of articles of the present inven-

tion, but are not intended to be limiting thereof.

#### Example I

An article of the present type is manufactured in the form of a simple pad by affixing a 10 cm x 10 cm element of eight denier polyethylene fibers to a 10 cm x 10 cm flexible polyethylene backing sheet. The fibrous element is prepared using standard carding equipment from crimped fibers having an average length of 7 cm; the element has a basis weight of 20 grams/m<sup>2</sup> and a thickness of 10 mm. The fibrous element is bonded to the backing sheet using a heat rod to provide a bonding pattern in the form of three concentric circles on the face of the article, and a separate bond completely around the four sides of the web. The average Z-direction thickness of the fibrous element in the resulting web assembly is 8.5 mm.

The fibrous element of the web assembly prepared in the foregoing manner is uniformly coated with three grams of an oleaginous cleansing agent comprising a 20:50:2 (wt) mixture of mineral oil:petrolatum:silica gel.

The article of Example I is suitable for use in a variety of cleaning situations where it is desirable to leave an oleaginous film on the surface being cleaned, and where the surface being cleaned is contaminated with substantial amounts of solid waste. For example, the article of Example I is suitable for perineal cleansing of infants and incontinent patients, and is conveniently disposable. The article is also useful for removing cosmetics from the face. Likewise, the article is quite useful for cleaning muddy metal surfaces, such as automobiles, motor cycles, and the like. When cleaning metal surfaces, the article is simply wiped across the surface, whereupon particulate matter present on the surface is removed and contained within the fibrous element, while a protective oleaginous film is concurrently transferred to the metal surface.

#### Example II

The articles of the present invention conveniently provide an oleaginous cleansing agent on their fibrous element wiping surface. When cleaning the perineal region of incontinent patients and infants, for example, this agent is transferred to fecal matter to aid in its removal from perineal skin. In a less convenient mode, a pad-type web assembly of the present type which does not contain the oleaginous cleansing agent can be used for perineal cleaning, and the like. When so doing, an oleaginous cleansing agent such as mineral oil, or the like, is poured or spread onto the fecal matter, and, thereafter, the fecal matter is wiped away using the web assembly.

In a typical patient cleansing operation, the perineal region of an incontinent adult patient is cleansed from fecal residues by applying ca. 4 ml of medium-grade mineral oil to the feces and soiled skin area, and, thereafter, wiping the area



with a web assembly of the type described in Example I.

### Claims

1. A cleansing article comprising a web of fibrous material of basis weight in the range from 17 g/m<sup>2</sup>—70 g/m<sup>2</sup> releasably impregnated with, or intended for use with, an oleaginous cleansing agent characterised in that the web comprises (a) a high loft element (1) having an uncompressed thickness of at least 2 mm formed of resilient fibers and comprising the wiping surface, said element having a usable void volume of at least 90% under a compression of from 7.75 g/cm<sup>2</sup> to 15.5 g/cm<sup>2</sup> and (b) a faeces-impermeable backing sheet (2) co-extensive with said element (1) and sealed to said element around the edges thereof.

2. An article according to Claim 1 wherein said web has an uncompressed thickness of from 4 mm to 5 mm.

3. An article according to either one of Claims 1 or 2 wherein said web has a density which increases on compression from 0.01 g/cm<sup>3</sup> uncompressed to 0.04 g/cm<sup>3</sup> when compressed under hand pressure.

4. An article according to any one of Claims 1—3 wherein the fibers comprising said web are crimped.

5. An article according to any one of Claims 1—4 wherein said resilient fibers are hydrophobic.

6. An article according to Claim 5 wherein the average fiber diameter is in the range from 0.009 mm to 0.075 mm.

7. An article according to Claim 6 wherein said fibers are crimped polyester fibers having an average diameter from 0.0185 mm to 0.037 mm.

8. An article according to any one of Claims 4—7 wherein said fibers have an average linear extent, in the crimped state, in the range from 7.6 cm to 15.5 cm.

9. A cleansing article according to any one of Claims 1 to 8 especially adapted for removing fecal matter from skin, characterised in that the web and the faeces impermeable sheet form an assembly, said assembly being affixed to a rear backing to provide a mitten-like article.

10. An article according to Claim 9 wherein said rear backing is an absorbent sheet.

### Revendications

1. Article de nettoyage comprenant une couche de matière fibreuse d'un poids de base compris entre 17 g/m<sup>2</sup> et 60 g/m<sup>2</sup> imprégnée d'un agent de nettoyage huileux de façon à pouvoir libérer celui-ci ou destinée à être employée avec cet agent, caractérisé en ce que la couche comprend (a) un élément à fort gonflant (1) ayant une épaisseur à l'état non comprimé d'au moins 2 mm, formé de fibres élastiques et comprenant la surface d'essuyage, cet

élément ayant un volume de vide utilisable d'au moins 90% sous une compression de 7,75 g/cm<sup>2</sup> à 15,5 g/cm<sup>2</sup> et (b) une feuille de soutien (2) imperméable à la matière fécale, ayant les mêmes dimensions que l'élément (1) et scellée à cet élément sur les bords de celui-ci.

2. Article selon la revendication 1, caractérisé en ce que ladite couche a une épaisseur à l'état non comprimé de 4 mm à 5 mm.

3. Article selon l'une des revendications 1 ou 2, caractérisé en ce que ladite couche a une densité qui augmente à la compression de 0,01 g/cm<sup>3</sup> à l'état non comprimé jusqu'à 0,04 g/cm<sup>3</sup> quand elle est comprimée sous la pression de la main.

4. Article selon l'une quelconque des revendications 1 à 3, caractérisé en ce que les fibres constituant ladite couche sont ondulées.

5. Article selon l'une quelconque des revendications 1 à 4, caractérisé en ce que les fibres élastiques sont hydrophobes.

6. Article selon la revendication 5, caractérisé en ce que le diamètre moyen des fibres est compris entre 0,009 mm et 0,0075 mm.

7. Article selon la revendication 6, caractérisé en ce que les fibres sont des fibres de polyester ondulées ayant un diamètre moyen de 0,0185 mm à 0,037 mm.

8. Article selon l'une quelconque des revendications 4 à 7, caractérisé en ce que les fibres ont une longueur linéaire moyenne à l'état ondulé comprise entre 7,6 cm et 15,5 cm.

9. Article de nettoyage selon l'une quelconque des revendications 1 à 8, particulièrement adapté pour enlever la matière fécale de la peau, caractérisé en ce que la couche et la feuille imperméable à la matière fécale forment un assemblage, cet assemblage étant fixé à un support postérieur pour former un article du genre mitaine.

10. Article suivant la revendication 9, caractérisé en ce que ledit support postérieur est une feuille absorbante.

### Patentansprüche

1. Ein Reinigungsgegenstand, umfassend ein Fasergebilde aus faserigem Material mit einem Flächengewicht im Bereich von 17 g/m<sup>2</sup>—70 g/m<sup>2</sup>, der in freisetzbarer Weise mit einem öligen Reinigungsmittel imprägniert oder für die Verwendung mit einem öligen Reinigungsmittel bestimmt ist, dadurch gekennzeichnet, daß das Fasergebilde (a) ein Hochflausch element (1), das eine Dicke im unkomprimierten Zustand von wenigstens 2 mm aufweist aus elastischen Fasern gebildet ist und die Wischfläche darstellt, wobei das genannte Element ein nutzbares Leervolumen von wenigstens 90% unter einer Kompression von 7,75 g/cm<sup>2</sup> bis 15,5 g/cm<sup>2</sup> hat, und (b) ein kotundurchlässiges Unterlagsblatt (2), das die gleichen Abmessungen wie das genannte Element (1) aufweist und mit dem genannten Element entlang der Ränder desselben

abdichtend verbunden ist, umfaßt.

2. Ein Gegenstand gemäß Anspruch 1, worin das Fasergebilde eine Dicke im unkomprimierten Zustand von 4 mm bis 5 mm hat.

3. Ein Gegenstand gemäß einem der Ansprüche 1 oder 2, worin das genannte Fasergebilde eine Dichte aufweist, die sich bei der Kompression von 0,01 g/cm<sup>3</sup> im unkomprimierten Zustand auf 0,04 g/cm<sup>3</sup> bei Kompression unter Handdruck erhöht.

4. Ein Gegenstand nach irgendeinem der Ansprüche 1 bis 3, worin die im Fasergebilde enthaltenen Fasern gekräuselt sind.

5. Ein Gegenstand nach irgendeinem der Ansprüche 1 bis 4, worin die elastischen Fasern hydrophob sind.

6. Ein Gegenstand nach Anspruch 5, worin der mittlere Faserdurchmesser im Bereich von 0,009 mm bis 0,075 mm liegt.

7. Ein Gegenstand nach Anspruch 6, worin

die genannten Fasern gekräuselte Polyesterfasern mit einem mittleren Durchmesser von 0,0185 mm bis 0,037 mm sind.

8. Ein Gegenstand nach irgendeinem der Ansprüche 4 bis 7, worin die genannten Fasern eine durchschnittliche lineare Erstreckung, im gekräuselten Zustand, im Bereich von 7,6 cm bis 15,5 cm aufweisen.

9. Ein Reinigungsgegenstand nach irgendeinem der Ansprüche 1 bis 8, der insbesondere zur Entfernung von Kotmaterial von der Haut geeignet ist, dadurch gekennzeichnet, daß das Fasergebilde und das kotundurchlässige Blatt eine Anordnung bilden, wobei die genannte Anordnung an einer Rückseitenunterlage, unter Bildung eines fausthandschuhartigen Gegenstandes, befestigt ist.

10. Ein Gegenstand gemäß Anspruch 9, worin die genannte Rückseitenunterlage ein absorbierendes Blatt ist.

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0 032 793

Fig. 1

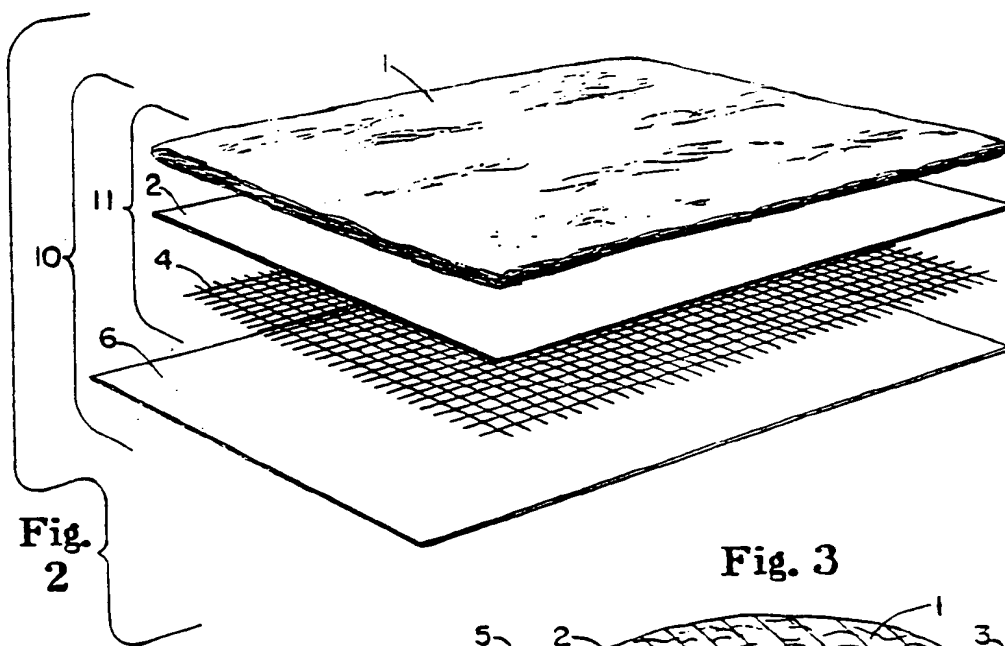
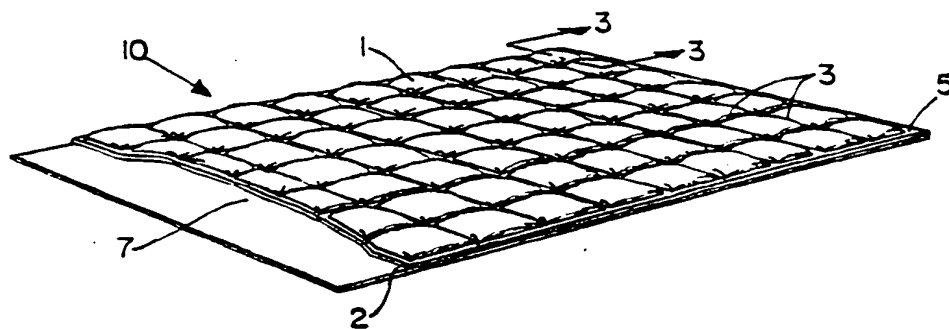
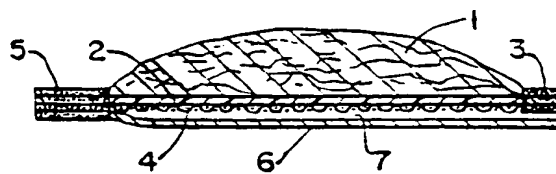


Fig. 3



0 032 793

Fig. 4

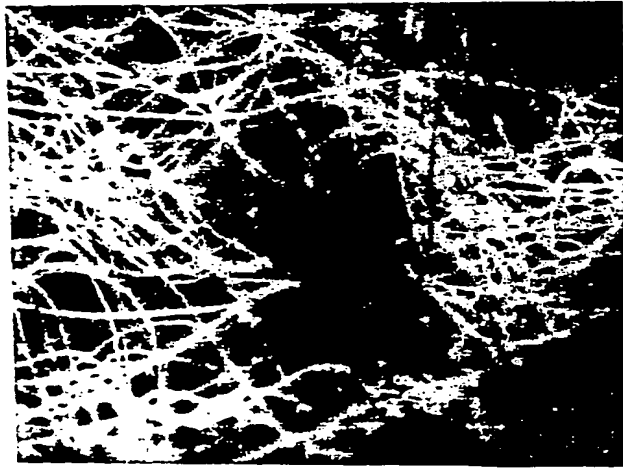


Fig. 5

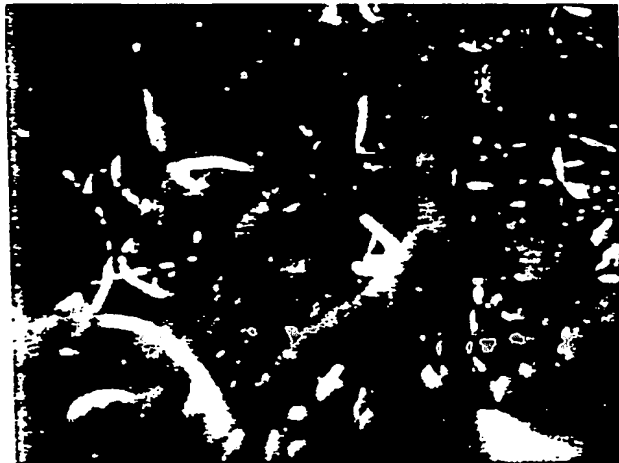
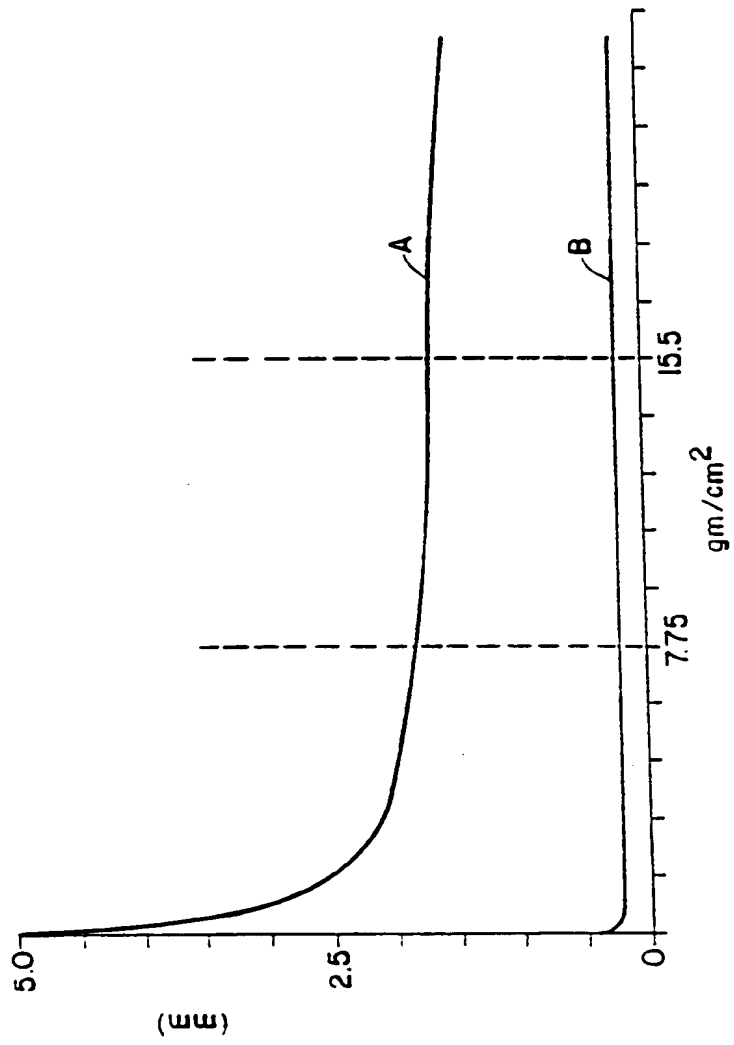


Fig. 6



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